Assisted reproductive technological blunders (ARTBs)

John Harris

When things go wrong with assisted reproduction we should look at what's best for everyone in the particular circumstances

ARTBs, as we must now call them, are becoming more and more frequent. In the recent United Kingdom case (discussed in April *JME*[1–3]) Mr and Mrs A, a "white" couple, gave birth to twins described as "black". The mix up apparently occurred because a Mr and Mrs B, a "black" couple, were being treated in the same clinic and Mrs A's eggs were fertilised with Mr B's sperm. Mr and Mrs A love the twins and wish to keep them and the facts seem to be that Mrs A is the genetic mother of the twins but her partner is not the genetic father. Under English law, in assisted reproduction, the woman who gives birth to the child is the legal mother and this is true also in cases of surrogacy. I think there is no doubt in this case that English law has taken the right path and that it would be unconscionable to contemplate taking a child away from the woman who had undergone the risks and pains of pregnancy and childbirth and the bonding process that goes along with that when she wishes to keep the child particularly when there is no substantial and pressing evidence that she would be an unsafe parent. I argued this in my book *The Value of Life*[4] and I think it is still true. So in this case justice, morality, and decency are served by confirming Mr and Mrs A as the parents of the children. Since in English law there is some ambiguity over paternity and how that is to be assigned and since Mr A is apparently not the genetic father, I think it is important that Mr B or whoever does turn out to be the sperm donor in this case is protected from the responsibilities of paternity (financial maintenance etc) and also is not permitted the right to access or contact which might otherwise be thought to go with genetic paternity.

GENETIC ORIGINS

This raises very interesting and complex questions about genetic origins, genetic identity, and the desirability or undesirability of full knowledge disclosure and access to all the types of relatedness that can exist between human beings. In their very interesting contribution to this debate Murray and Kaebnick made two interesting but somewhat perplexing assertions.[3] They claim: "The child born to a woman who is also its genetic mother is her biological child in both senses. The man supplying the sperm is the biological father. So much is beyond dispute." This, if accurate, is of course a tautology. But is it accurate in the senses implied and is it beyond dispute? A genetic mother may be the mother of the mitochondrial DNA but possibly not the 23 chromosomes, or vice versa. Moreover, the relatively recent technique of "haploidisation" allows us to take an adult cell, divide its genetic material in half, use the 23 chromosomes from one half to act as a "sperm" to fertilise an egg and combine with the 23 chromosomes in the egg.

In theory a woman could use haploidisation to clone herself. There would, however, be a high risk of two identical chromosomes resulting and therefore a high risk of any "bad" genes appearing in a double dose and causing abnormalities. This technique combined with successful preimplantation genetic diagnosis (PIGD) might, however, eliminate such a risk. The only certainly "safe" embryos produced in this way would be clones of the mother/sister. Or, the "genetic mother" may be a cell nuclear donor who uses a host egg with the mitochondrial DNA of another woman. Either the 23 or the 46 chromosomes or the mitochondrial DNA are "genetic motherhood". Equally, the child, if it is a clone, may have the sperm donation removed many generations. Whether the cell nucleus donor (if that is a man) or the original sperm provider is the biological father is not beyond dispute because the meaning of "biological father" is not beyond dispute. It used to be said, "motherhood is a fact, paternity merely a hypothesis". Alas, the days when this joke had even a ring of truth are long gone!

Murray and Kaebnick also analysed the problem in terms of different "meanings of parenthood" and identified parenthood as biology, parenthood as intention, and parenthood as childrearing. I have to say I fail to understand their second category "parenthood as intention". Since I may intend to be a parent but never become one, it seems rather odd to think that my intention to become one somehow makes me a type of a parent in the absence of some resulting progeny. On this view, parenthood as intention is rather like being a millionaire in intention but not in money! Moreover, because parenthood as intention can be an empty category of parenthood and because it is very likely that a majority of children worldwide are conceived without any intention on the part of those who do the conceiving to become parents, it seems that parenthood as intention is hardly a category or type or even a plausible "meaning" of parenting. I also do not see much future in asking, or indeed trying to answer, the question as to who are the *real* parents? If such a question is insisted on, however, it seems to me that the only answer to that question is that the real parents of a child are the parents who love, care for, and rear that child whether or not they intended to become its parents, and whether or not they are genetically related to the child.

GENETIC RELATEDNESS

It is sometimes said that genetic relatedness between adults and children or for that matter between adults and adults somehow confers a priority in relationships and that in particular it is in a child's interests that its genetic origins are known and also that it is in the adult's interests or indeed is somehow their entitlement to know their genetic relatedness to their children. All of this seems to be doubtful. It has been argued, for example, that uncertainty about one's genetic origins can cause psychological problems and expose a child to dangers.[5] There are two main reasons why one might wish to know one's genetic origins. One is curiosity about personalities, about who the individuals are or were whose genes I share; what their stories were, how I came to be conceived, and so on. The second is concern about genetic traits that I may have inherited and the desirability of my being aware of any genetic dangers or opportunities that my particular constitution may confer on me. These two stories have now come apart because whereas formerly, genetic histories, family histories, were the only source of genetic warnings, the completion of the human genome project and consequently the imminence of complete genetic profiling means there is another source of this information, quite independent of family histories. So that very soon, if the desirability of knowing genetic origins is supposedly "health related", I may acquire this information

quite independently of knowledge about the personalities involved in my genetic origins. Whether or not curiosity about the personalities involved is of a sort that requires satisfaction, given the complexities of satisfying that curiosity, is a very large question with many alarming possible consequences.

Other things being equal of course it is nice to attach personal stories to one's origins; but consider that if we are to grant any entitlement to that sort of genetic information, that is to say not simply information about genes but information about personalities and identities, a whole range of consequences may follow. It is believed that there is a very high so called "non-paternity" rate. That is, many husbands and partners are not the genetic fathers of the children they believe to be "theirs" in the genetic sense. It is unclear how widespread this phenomenon is but estimates vary between 0.5% and upwards of 30% in some communities.[6] The recognition of an entitlement to information about the personalities involved in one's genetic origins would threaten the peace and harmony of very many families to no obvious purpose. If we grant this right in the case of assisted reproduction or in the case of egg or embryo donation, adoption etc it seems inconsistent not to grant it to every child and for that matter to every father (or mother now that egg donation and surrogacy are more common). It is unclear to me that by making this a comprehensive right or entitlement we would be creating a better world. Indeed, we might be better advised to minimise the importance of knowledge of the personalities that go along with genes and simply highlight the health related importance which can be or will soon be able to be derived from genetic testing alone, quite independently of family histories.

There is another reason for downplaying the personality element of genetic relatedness. We now know that a mother shares 99.95% of her genes with her daughter. Indeed, you and I (I believe we have never met but who knows who our fathers (or mothers) were or who our children may be?), as two randomly selected persons on the planet, share 99.90% of our genes with one another. We are very closely genetically related, separated by 0.5% in the number of our genes. (I shall soon be looking to you for maintenance!) In view of these facts I confess that I have also come to have greater affection for bananas, with which I share around 50% of my genes, than was formally the case. This is altogether healthy and perhaps should lead us to downplay the importance of personalities.

RACE AND RACISM

There is another element to the present story that is somewhat disturbing, and that is the issue of race and race matching. As is well known, it used to be common practice for adoption agencies to try to race match adoptive children with parents, but this is now far less common and I believe for good reason. The following questions which I asked some time ago still seems to me to be pertinent.[7] "Why do so many people firmly believe that children should be like their parents, particularly in terms of their general colour and racial characteristics? It is difficult not to view this desire, and attempts to implement it, as a form of 'ethnic cleansing', it smacks very much of the pressure that so many societies and cultures have put upon their members not to 'marry out' or, to put it more bluntly, not to mate with somebody of another tribe or race. This has often taken the form of particular hostility to the resulting children, with pejorative terms like 'half caste' being used to describe the children of a mixed race union. As with prejudice against interracial marriage, the therapy of choice is surely not to prevent people from choosing their procreational partners according to their own preferences, but rather to try to eradicate the prejudice in society that makes people hostile to such unions and to the resulting children." This still seems to me to be the right approach to issues of race in reproduction and I believe that no weight should be given to the fact that we may see a white couple rearing black children or vice versa.

THE AVOIDANCE OF BLUNDERS

Murray and Kaebnick[3] are, however, quite right that mistakes in assisted reproductive services are worrying and will undermine confidence in the whole process. I have a right to expect high standards of competence and professionalism when seeking assisted reproductive services and I am entitled to expect that my sperm and my partner's eggs or our embryos will not be mixed up or damaged or disposed of in ways of which we do not approve. Therefore while maintaining and insisting upon the high standards from assisted reproductive services where, as is inevitable in all human affairs, errors occur we should not, I think, give priority to the correction of those errors which may, from the point of view of both ethics and justice, be undesirable or unworkable but rather address directly the question of what is best for everyone in the circumstances which obtain.

In conclusion, the mix up, while disturbing, is not disastrous. We have one set of happy parents and hopefully a set of happy children. The man whose sperm was inadvertently misplaced should be free from parental responsibilities and not be entitled to parental rights in connection with the resulting children, but he should be compensated by the clinic involved and he and his partner given extra assistance in achieving the family that they desire.

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Author's affiliation
John Harris, Institute of Medicine, Law and Bioethics, School of Law, University of Manchester, Manchester M13 9PL, UK; John.M.Harris@man.ac.uk

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